

**SECTION 07540  
THERMOPLASTIC SINGLE PLY ROOFING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

Furnish and install a mechanically fastened flexible sheet roofing system including all related accessories as indicated on the drawings, specifications and contract documents.

**1.2 QUALITY CONTROL**

- A.** The Roofing System shall only be applied by approved, trained roofing contractors certified by the approved manufacturer.
- B.** All roofing and roof accessories shall be installed in compliance with the approved manufacturer's current specifications and details.
- C.** This guide specification is an application guide and shall be used in conjunction with the approved manufacturer's current details, architectural plans, specifications and the approved manufacturer's components listing.
- D.** Deviations from accepted manufacturer's specifications and details must be approved in writing by the manufacturer.

**1.03 CONDITIONS**

- A.** New construction: The general contractor shall be responsible for providing proper surfaces to receive roofing and flashings. The Roofing System shall not be applied during periods of precipitation. Contact Flex Technical Services Department for recommendations when the ambient temperature is less than 32°F.
- B.** The structural load bearing capacity of the roof deck shall be determined by the design engineer prior to start of work.
- C.** Protection:
  - 1. Provide protection and avoid heavy traffic on completed work.
  - 2. Protect surrounding work from damage by roofing operations.

**1.04 GUARANTEE**

- A.** The roofing contractor shall furnish to the owner, the manufacturer's standard five (5) year or optional ten (10) year or fifteen (15) year guarantee of water tightness.
- B.** The roofing contractor shall complete and submit to the approved manufacturer requested documents signed by a company officer prior to job

start for project approval. The approved manufacturer reserves the right to inspect the installed roofing system to assure quality workmanship and conformity to its standard details and specifications.

- C. The Contractor will bear responsibility for any deviations from the approved manufacturer's current specifications or details without prior written approval.

## **1.05 PRODUCT CAUTIONS & STORAGE**

- A. All materials shall be delivered to the job site in the original new, dry unopened packaging clearly indicating product type and manufacturer's name.
- B. Seam sealer is flammable and care shall be taken in the handling and storage of this material.
- C. The roofing system must not come in contact with the following list of non-compatible substances:
1. Asphalt
  2. Coal Tar Pitch
  3. Fats & Oils- Animal/Vegetable
  4. Gasoline, Diesel, and Jet Fuel
  5. Any Petroleum Based Product

## **PART 2 - MATERIALS (POLYESTER REINFORCED)**

### **2.01 MATERIALS**

- A. The Membrane shall be reinforced flexible sheet roofing and have the below listed minimum physical properties:

<b>PROPERTY PROPERTIES</b>	<b>TEST PROCEDURE</b>	<b>PHYSICAL</b>
Color		White or Gray
Thickness Nom.	ASTM D751	.050", .060", .07" & higher
Breaking Strength	ASTM D751/D638	>230 lbs.
Elongation	ASTM D751/D638	100%
Shore "A" Hardness	ASTM D2240	83

Heat Aging	ASTM D3045	90% of Original		
Cold Resistance	ASTM D2136	- 40°F		
Water Vapor Permeability		ASTM E96	3.5g/m2/day	
Wt. Change after Immersion	ASTM D570	1.5% max		
Linear Dimensional Change	ASTM D1204	.5% or less		
Accelerated Weathering		ASTM D2565	After	10M
hrs.	(Xenon Arc)	(No Change)		
Underwriters Laboratories		Class A		
Factory Mutual	Class 1-90			
Polyvinyl chloride sheet roofing	ASTM D4434			

**B.** Flashing material shall be the approved manufacturer's flashing membrane or coated material as specified the manufacturer's standard details.

**C.** When coated metal is required it shall be nailed or screwed to wolmanized pressure treated wood.

**D.** All seams shall be made by the use of the hot-air welding tool.

**E.** All seams shall be checked, voids repaired and flexible seam sealer applied to all end laps and non-factory edges, daily as work is completed.

**F.** Separation layer is required over all substrates and shall be:

1. Reinforced laminated paper.
2. Aluminum foil as a facing on insulation.
3. Or as approved in writing by the approved manufacturer.

## **2.02 OTHER MATERIALS**

**A.** Any insulation manufactured for the purpose of roof work is acceptable provided it is compatible with the deck design and meets with needed thermal insulation value and has the structural capacity to span steel deck flutes; minimum thickness is one-half inch (1/2"). The insulation shall be

mechanically fastened to the deck in a Factory Mutual (F.M.) approved manner with all joints staggered.

**B.** Fasteners shall be: (Note: Check the approved components listing for specific types)

1. Metal Deck: F.M. approved self-tapping screws per approved components listing
2. Wood Deck: F.M. approved self-tapping screws per approved component listing. Gypsum Deck Gypsum Deck- Toggle bolts or approved equal.
3. Wood Fiber Deck- Toggle bolts or approved equal.
4. Concrete Deck Concrete Deck- Wood nailer grid to match nail rail pattern fastened to the deck with concrete anchors. Minimum wood and insulation thickness 1" inch (wolmanized).

**C.** Walkways shall be Flex 125 mil, gray walkway pad.

**D.** Approved caulking shall be as named on the accepted manufacture's approved components listing.

**E.** Fastener plates shall be 2" round F.M. approved discs as supplied by the accepted manufacturer.

### **PART 3- EXECUTION**

#### **3.1 PREPARATION**

**A.** The roof deck must be clean and free of foreign material (i.e. oil, water, sharp edges, etc.)

**B.** Decking shall be laid in a level course and properly secured to eliminate any bridging of the insulation.

**C.** Insulation shall be secured to the deck in a Factory Mutual approved method.

#### **3.02 ROLL PLACEMENT AND SEAMING**

**A.** Rolls may be placed in any direction starting from the bottom and working to the top of the slope.

**B.** All seams shall be a 2" minimum finished width for the length of the sheet and a 4" minimum finished width for end laps.

**C.** All seams shall be made by the use of the hot-air welding tool.

**D.** All seams shall be checked with a needle probe and voids repaired with the hot-air welding tool.

E. All end laps and non-factory edges will receive flexible seam sealer, as required.

F. Fastener assemblies shall be placed 12" on center, not to exceed 15" on center, in the field of the roof and 6" on center for all Factory Mutual defined perimeters.

G. The field membrane must be terminated at all walls, curbs, pipes, expansion joints, and at all roof penetrations and projections.

### **3.03 FLASHINGS**

A. Install all flashings in conjunction with architectural plans and the approved manufacturer's standard details. Flashing material shall be coated metal or the same membrane being used throughout.

B. Walkways shall be Flex 125 mil, gray walkway pad and must be used in high traffic areas.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.01 GENERAL**

Separate measurement and payment will not be made for the work of this Section. The cost for all work, complete in place, furnishing and installing all materials, equipment and accessories required; providing all tools, labor, transportation, handling and storage; and performing all work incidental to completion of work of this Section, shall be included in the Contract Lump Sum Prices for the work as indicated herein

### **4.02 PAYMENT ITEMS**

<u>ITEM NO.</u>		<u>DESCRIPTION</u>
<u>UNIT</u>		

0750.000	Thermoplastic Roofing	LS
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**END OF SECTION**